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10/520,482	09/23/2005	Shaobo Zhang	B-5633PCT 622410-7	6541

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EXAMINER	
HEIBER, SHANTELL LAKETA	
ART UNIT	PAPER NUMBER
2617	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/520,482	ZHANG, SHAOBO	
	Examiner	Art Unit	
	SHANTELL HEIBER	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 November 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *1/7/05* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Snapp, U.S. Patent No. 6,996,396.

Regarding Claim 1, Snapp discloses a network for implementing localized roaming of mobile subscribers, comprising: a Visiting Location Register (VLR) **(GSM VLR 104)** in a contracted roaming network, a Home Location Register (HLR) **(HLR 114)** in a home network, and at least one Roaming Number Manager (RNM) **(Gateway 102)** connected with the HLR in the home network **(Figure 1)**; wherein the HLR in the home network is adapted to inform an RNM **(the HLR confirms the ANSI-41 customer currently roaming in the GSM network account is in good standing)** corresponding to the current location of a subscriber roaming in the contracted roaming network of subscriber location update upon receiving a request from the VLR in the contracted

roaming network **(upon registration, the GSM mobile switching center requests a temporary transfer-to telephone number from an ANSI-41/GSM gateway connected between the ANSI-41 network and the GSM network; Col. 3, lines 32-48)**; the RNM is adapted to allocate a local mobile phone number from a pool of local mobile phone numbers in the contracted roaming network for the phone, store mapping between the allocated local mobile phone number and the phone **(MGW 102 assigns one of a plurality of temporary transfer-to telephone numbers to subscriber unit 106. Since MGW 102 has its own pool of temporary transfer-to telephone numbers, the number is "marked" as being in use; Col. 5, lines 28-47 and Figure 5)**, and return the allocated local mobile phone number to the HLR in the home network, and wherein the allocated local mobile phone number is adapted to be utilized to process an incoming call or an outgoing call in the contracted roaming network **(ANSI HLR 114 receives the TLDN and sends it to ANSI gateway MSC 112 in a location request. The call is routed by ANSI gateway MSC 112 to GSM serving MSC 104; Col. 6, lines 24-29)**; and the HLR in the home network is further adapted to send the local mobile phone number in the contracted roaming network to the VLR in the contracted roaming network to be inserted in the VLR **(MGW 102 constructs and sends a message which includes the temporary transfer-to telephone number to GSM serving MSC 104. The message is received at GSM serving MSC 104, which stores the temporary transfer-to telephone number and acknowledges the message; Col. 5, lines 48-56).**

Regarding Claim 2, Snapp discloses wherein said RNM is embedded in said HLR. **Figure 1**

Regarding Claim 3, Snapp discloses comprising: a. configuring the RNM with local mobile phone numbers in contracted roaming network, an independent Public Switched Telephone Network/Integrated Service Digital Network (PSTN/ISDN) number and a signaling point code **(Col. 5, lines 28-47 and Figures 1 & 5)**; b. configuring data in entities of the contracted roaming network and entities of the home network, so that the subscriber location query message taking a local number in the roaming network as the destination address will be directed to the RNM in the home network **(Col. 6, lines 10-31)**; c. establishing interfaces between the RNM and entities of the contracted roaming network as well as between the RNM and entities of the home network **(Col. 6, lines 10-31 and Figure 1)**; and d. developing communication services in the roaming network based on the configuration in respective entities of the contracted roaming network and the home network, implementing localized roaming of the subscriber **(Col. 6, lines 10-31 and Figure 1)**; wherein the RNM is adapted to allocate a local mobile phone number from a pool of local mobile phone numbers in the contracted roaming network for the phone, wherein the allocated local mobile phone number is adapted to be utilized to process an incoming call or an outgoing call in the contracted roaming network **(Col. 5, lines 28-47 and Col. 6, lines 24-29)**.

Regarding Claim 4, Snapp discloses wherein said step c comprises: cl. establishing an interface between the RNM and an MSC in the roaming network; c2. establishing an interface between the RNM and the HLR in the home network. **Figure 1**

Regarding Claim 5, Snapp discloses wherein said step d comprises a subscriber location update process: d1. sending a location update request from the VLR currently serving the subscriber to the HLR in the home network **(Col. 5, lines 17-20)**; d2. according to the location update request received from the VLR and the current location of the subscriber, addressing the RNM corresponding to the current location of the subscriber through the PSTN/ISDN number of RNM and informing the RNM of the subscriber location update, by the HLR in the home network **(Col. 5, lines 28-30)**; d3. allocating by the RNM a local mobile phone number in the roaming network, to the phone, and returning said number to the HLR in the home network **(Col. 6, lines 10-29)**; and d4. inserting said local mobile phone number in the roaming network into the VLR currently serving the subscriber and returning an acknowledgement message of obtaining said number in the roaming network to the RNM, by the HLR in the home network **(Col. 5, lines 48-56 and Col. 6, lines 24-29)**.

Regarding Claim 6, Snapp discloses wherein step d3, before allocating a local mobile phone number to the phone, further comprises: determining by the RNM whether the roaming region where the subscriber is roaming is a contracted roaming region; if so, allocating one from the available numbers in the contracted roaming network and feedings the allocated number back to HLR in the home network by the RNM; otherwise feeding the mobile phone number of the subscriber in the home network to HLR in the home network. **(Col. 5, lines 17-20; Col. 5, lines 28-30 and Col. 6, lines 24-29).**

Regarding Claim 7, Snapp discloses wherein an incoming call or an outgoing call is processed by using the number fed back from RNM in the home network. **(Col. 3, lines 49-57).**

Regarding Claim 8, Snapp discloses further comprising: informing the subscriber of the location update by voice, short message or Unstructured Supplementary Service Data. **(Col. 3, lines 49-57).**

Regarding Claim 9, Snapp discloses wherein the call is processed by using the number fed back from RNM in the home network in the following manner: when acting as the caller, the subscriber uses the number fed back from the RNM in the home network to initiate a call; when the subscriber acts as the called party, if the called number is the mobile phone number in home network, the MSC in the home network queries HLR in the home network to determine the calling route, the HLR finds the corresponding subscriber record, obtains address of VLR currently serving the subscriber, and accesses said VLR to obtain the calling route, with which the HLR instructs the MSC in the home network to establish a calling route; if the called number is a local mobile phone number in a roaming region, the MSC in the roaming network queries RNM about calling route information, the RNM finds the subscriber identifier, queries the HLR about the calling route information in accordance with the subscriber identifier, and forwards the calling route information returned from HLR to the MSC in the roaming network **(Col. 3, lines 49-57 and Col. 6, lines 10-29)**.

Regarding Claim 10, Snapp discloses further comprising: when the subscriber leaves the contracted roaming network, (HLR) in the home network informs the (RNM)

of the subscriber location update, the RNM releases the local mobile phone number, occupied by the subscriber, in the roaming network, and breaks the mapping between the number and the subscriber. **(Col. 7, lines 11-15).**

Regarding Claim 11, Snapp discloses further comprising: binding the local mobile phone number in the contracted roaming network to the subscriber. **(Col. 5, lines 28-47).**

Regarding Claim 12, Snapp discloses wherein said VLR in step d1 addresses the HLR in the home network in accordance with International Mobile Subscriber identifier (IMSI) of the subscriber **(Col. 6, lines 7-9)**.

Regarding Claim 13, Snapp discloses wherein the information carried the location update request sent from VLR to HLR in step d1 and the parameters carried in the location update informed from HLR to RNM in step d2 comprise: the IMSI of the subscriber and/or the mobile phone number in the home network, current location of the subscriber and old location of the subscriber **(Col. 5, lines 17-20 and Col. 6, lines 7-9)**.

Regarding Claim 14, Snapp discloses wherein the subscriber location update process further comprises: d5. informing the RNM serving the old location of the subscriber by the HLR in the home region; d6. if there is no binding relation between the subscriber and the local mobile phone number occupied by the subscriber, releasing said local mobile phone number occupied by the subscriber by the RNM; d7. sending a response from the RNM to the HLR in the home network. **(Col. 7, lines 11-15).**

Regarding Claim 15, Snapp discloses wherein the subscriber location update process further comprises: sending an acknowledgement for number allocation from the

HLR to the RNM serving the current location of the subscriber, after receiving an acknowledgement for subscriber data insertion from VLR. **(Col. 3, lines 49-57).**

Regarding Claim 16, Snapp discloses wherein the subscriber location update process further comprises: if not receiving the acknowledgement for number allocation from the HLR for a determined period, the RNM will release the allocated number. **(Col. 7, lines 11-15).**

Regarding Claim 17, Snapp discloses wherein said step d comprises a process for calling the subscriber with the local mobile phone number in the roaming network; said process comprising: d8. when the call is made to the subscriber with the local mobile phone number the roaming network, initiating a route query from a GMSC in the roaming network to the RNM currently serving the subscriber **(Col. 3, lines 49-57)**; d9. after receiving the query, the RNM searching for the subscriber identifier according to the local mobile phone number in the roaming network, and querying HLR in home network for about the calling route in accordance with the subscriber identifier; d10. returning the query result from the HLR in the home network to the RNM, which sends an acknowledgement for route query to the GMSC and instructs the GMSC to establish the route with the number obtained from the HLR **(Col. 5, line 60-Col. 6, line 29)**.

Regarding Claim 18, Snapp discloses wherein said step d also comprises a process for calling the subscriber with the mobile phone number in the home network; said process comprising: d11. when the call is made to the subscriber by using the mobile phone number in the home network, initiating a route query from a GMSC in the home network to the HLR in the home network; d12. after receiving the query,

requesting the VLR currently serving the subscriber to allocate a temporary routing number according to the mobile phone number of the subscriber in the home network by the HLR in the home network; d13. allocating, by the VLR currently serving the subscriber, a temporary routing number to the subscriber, and returning said temporary routing number to the HLR in the home network; d14. sending an acknowledgement for route query from the HLR in the home network to the GMSC in the home network, and instructing the GMSC to establish a route with the allocated temporary routing number **(Col. 5, line 60-Col. 6, line 29)**.

Regarding Claim 19, Official Notice is taken in that the same procedure for establishing a call connection with the roaming subscriber according to Snapp mentioned above can also be applied when sending short messages. It would have been obvious to also include short messages to provide for a variety of well known fast and easy options for communicating.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bharatia et al., U.S. Patent No. 6,615,037 discloses a method apparatus and system for call forwarding when roaming from a first type network to a second type network in a communication system.

Houde et al., U.S. Patent No. 5,978,678 discloses a cellular telephone network routing method and apparatus for internationally roaming mobile stations.

Uchiyama et al., U.S. Patent No. 5,884,169 discloses a roaming mobile communication system and method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shantell Heiber whose telephone number is (571)272-0886. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on 571-272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Lester Kincaid/
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/S. H./
Examiner, Art Unit 2617
January 15, 2009